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EXAMINER

KRISHNAMURTHY, RAMESH

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 08/21/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/730,314

Applicant(s)

GELB ET AL

Examiner

Ramesh Krishnamurthy

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 33, 35 - 38, 41 - 47 is/are pending in the application.
- 4a) Of the above claim(s) 1 - 27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-43 is/are allowed.
- 6) ☐ Claim(s) 28 - 33, 35, 38 and 44 - 47 is/are rejected.
- 7) ☒ Claim(s) 36 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 3753

This office action is responsive to communications filed 05/27/2003.

**Claims 1 – 33, 35 – 38 and 41 – 47 are pending.**

1. Claims 1 – 27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions(s), there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/27/2003 has been entered.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 3753

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 28 – 33, 35, 38, 44, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmquist et al. (US 4,602,637) in view of Baker, Jr. (US 4,679,572) or alternatively as unpatentable over Elmquist et al. in view of Johansson et al. (US 5,427,631) and further in view of Baker, Jr. (US 4,679,572).

Elmquist et al. discloses a Heart pacemaker system comprising an electrode having layers with a first layer (Col. 3, lines 27 – 33) deposited on a substrate (i.e. carrier material) comprising platinum or titanium (Col. 3, lines 45 – 48), with the first layer comprising a carbide, nitride or carbon-nitride of at least one of the metals – titanium, vanadium, zirconium, niobium, molybdenum, hafnium, tantalum or tungsten.

However, Elmquist et al. fails to disclose a surface layer that comprises iridium. The patent to Baker, Jr. discloses that it is known in the art to use of a surface layer (that is in contact with the bodily humors) that comprises iridium since such a layer exhibits lower polarization thereby making available more energy for tissue stimulation (Col. 3, lines 14 – 25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the electrode in Elmquist et al. With a surface

layer that comprises iridium for the purpose of obtaining lower polarization thereby making available more energy for tissue stimulation, as recognized by Baker, Jr.

Elmquist et al. indicate (Col. 3, lines 59 – 62) that the first layer could be deposited by means of physical vapor deposition which here is taken to include the known methods of DC and RF sputtering. The use of an argon rich atmosphere for sputtering merely provides an inert gas atmosphere whose use is known in the art. The use of a nitrogen rich atmosphere for forming the first layer would allow the nitration of the first layer providing the layer with good conductivity.

Regarding claim 45, it is noted that Elmquist et al. disclose the substrate to include tissue-compatible metals which here is taken to include iridium.

Regarding claim 47, it is noted that Elmquist et al. discloses the formation of a first tight layer underlying a porous layer of Titanium nitride (Col. 3, lines 48 – 53).

It is noted that Elmquist et al. does not explicitly disclose the formation of the Titanium nitride on the substrate by first depositing a layer of Titanium and then subsequent nitration of the same. Since the formation of Titanium nitride from Titanium is conventionally known, such a step is considered inherent to the disclosure of Elmquist et al.. However, should it be determined that the steps pertaining to first depositing a layer of Titanium and then subsequent nitration of the same are not inherent to the disclosure of Elmquist et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to include these steps as they pertain to steps known in the art as exemplified by the disclosure of Johansson et al.

Art Unit: 3753

7. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elmquist et al. (US 4,602,637) in view of Baker, Jr. (US 4,679,572) or alternatively as unpatentable over Elmquist et al. in view of Johansson et al. (US 5,427,631) and further in view of Baker, Jr. (US 4,679,572) as applied to claims 28 – 33, 35, 38, 44, 45 and 47 and further in view of Moaddeb et al. (US 5,645,580).

The combination according to Elmquist et al. and Baker, Jr. or alternatively the combination of Elmquist et al., Baker, Jr. and Johansson et al. discloses the claimed invention with the exception of explicitly disclosing the substrate to comprise 90% platinum and 10% iridium.

The patent to Moaddeb et al. discloses (Col. 4, line 27 – 28) the use of a substrate that comprises 90% platinum and 10% iridium. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a substrate that comprise 90% platinum and 10% iridium, in the combination according to Elmquist et al. and Baker, Jr. or alternatively the combination of Elmquist et al., Baker, Jr. and Johansson et al. since such a composition is known to be tissue-compatible, as successfully used by Moaddeb et al..

8. Claims 41 – 43 are allowed.

9. Claims 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3753

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lorenz et al. and Bolz et al. disclose electrodes for medical applications.

***Response to Arguments***

11. Applicant's arguments filed 05/27/2003 have been fully considered but they are not persuasive. Applicant is essentially arguing that the electrode comprises a three-layer structure with the first layer being formed of elemental metal such as titanium. However, titanium is deposited on the substrate primarily to generate a layer of titanium nitride and such is also clear from the specification at page 8, lines 12 – 21 wherein a two-layer structure is clearly set forth. As set forth above the Elmquist et al. reference clearly shows such a two-layer structure (similar to that in the instant specification at page 8, lines 12 – 21), with the first layer comprising titanium nitride, which is conventionally formed by exposing a layer of titanium to a nitrogen rich atmosphere.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (703) 305 - 5295. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Rivell, can be reached on (703) 308 - 2599. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 - 9302 and for after-final communications, the fax phone number is (703) 872 9303.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 - 0861.



Ramesh Krishnamurthy  
Examiner  
Art Unit 3753  
August 16, 2003